THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SAM ROSE and GLENN C. BUCHANAN

Appeal No. 95-2960
Application 08/009,381[1]

ON BRIEF

Before KIMLIN, PAK and OWENS, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the examiner's final rejection of

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[1] Application for patent filed January 27, 1993. According to appellants, the application is a continuation of Application 07/730,586, filed July 15, 1991, now abandoned, which is a continuation of Application 07/348,280, filed May 5, 1989, now abandoned.

claims 8-16, which are all of the claims remaining in the application.

THE INVENTION

Appellants claim a method for forming a sterile connection between two separated compressible rubber tubing segments to permit sterile flow between them, by joining the ends of the rubber tubing segments with a hollow conductive metal tube and sterilizing the conductive metal tube and the ends of the rubber tubing segments using heat produced by an induction coil. Claim 8 is illustrative and is appended to this decision.

THE REFERENCES

Tenczar	4,030,494	Jun. 21, 1977
Smith	4,443,215	Apr. 17, 1984
Popovich et al. (Popovich)	4,475,900	Oct. 9, 1984
Isono	4,668,217	May 26, 1987

THE REJECTIONS

The claims stand rejected under 35 U.S.C. § 103 as follows: claims 15 and 16 over Smith and Isono; claims 8-10 and 12-14 over Smith, Isono and Popovich; claim 11 over Smith, Isono, Popovich and Tenczar.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with the examiner that

the invention recited in appellants' claims 8-11, 15 and 16 would have been obvious to one of ordinary skill in the art at the time of appellants' invention over the applied references. Accordingly, the aforementioned rejections of these claims will be affirmed. However, we will not sustain the rejection of claims 12-14.

At the outset, we note that appellants state that claims 15 and 16 stand or fall with claims 8-11 and that claims 12-14 stand or fall separately (brief, page 4). We therefore limit our discussion to one claim in each of these groups, namely, claims 8 and 12. *See In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c)(5)(1993).

Isono discloses a method for forming a sterile connection between two disassociated compressible rubber fluid conduit

tubing segments used in dialysis or transfusion, to permit sterile fluid flow between them (col. 3, lines 15-20; col. 6, lines 23-24). The rubber tubing segments are connected by a conductive metal tube which has male and female portions (col. 5, line 40 - col. 6, line 10). When a dialysis bag is replaced, the male and female portions of the conductive metal tube are

sterilized with an alcohol lamp (col. 12, line 34 - col. 13, line 24). Isono's method differs from that recited in appellants' claim 8 in that the rubber tubing segments are not compressed to isolate free ends thereof, the heating is not produced by induction, and there is no teaching that the ends of the rubber tubing segments are sterilized by the heating.

However, Popovich discloses that using clamps to isolate a portion of the connection tubing between a patient and a dialysis bag permits a potential contamination zone to be formed (col. 4, lines 53-59), and that heating the portion between the clamps using ultraviolet radiation permits all of the tubing and tubing connector in the potential contamination

zone to be sterilized, thereby reducing the risk of infection (col. 4, line 60 - col. 5, line 4). Popovich does not teach that the heating is provided by an induction coil. However, although Smith is directed toward heating a needle used to connect thermoplastic tubing in a dialysis device, the reference indicates that radiation and induction are alternative methods for heating a portion of the connection device between a dialysis bag and a patient (col. 4, lines 38-47; col. 5, lines 42-49). In view of these teachings by

Popovich and Smith, one of ordinary skill in the art would have been motivated to isolate a portion of Isono's tubing and connecting device between the dialysis bag and patient using clamps and to sterilize the entire portion between the clamps by a heating method such as induction to reduce the risk of infection, and would have had a reasonable expectation of success in doing so. Thus, such a method for isolating using clamps and sterilizing would have been *prima facie* obvious to one of ordinary skill in the art. *See In re Vaeck*, 947 F.2d

488, 493, 20 USPQ2d 1438, 1442 (Fed. Cir. 1991); *In re O'Farrell*, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988); *In re Longi*, 759 F.2d 887, 892-93, 225 USPQ 645, 648 (Fed. Cir. 1985).

Appellants argue that Isono does not use a single, unitary hollow conductive metal tube but, instead, uses a tubular member having elements which connect to each other (brief, page 6). Appellants' claim 8 does not require use of a one piece tube. Although Isono's tube has mating members, an end of each member is connected to a rubber tube segment, which is all that appellants' claim 8 requires.

Appellants argue that Isono does not disclose heating connected tubing using induction (brief, page 6). Motivation to do so would have been provided to one of ordinary skill in the art by Popovich and Smith as discussed above.

For the above reasons, the evidence and argument of record, on balance, leads us to conclude that the invention

recited in appellants' claim 8 would have been obvious to one of ordinary skill in the art within the meaning of 35 U.S.C. § 103.

Appellants' claim 12 requires that a sterile compressible rubber tubing segment be invaded by cutting it prior to using a hollow conductive metal tube to join end segments formed by the cutting. The examiner argues that Popovich teaches connection of two tube segments which have been closed off (answer, page 5). We do not find in Popovich, however, or in any of the other references relied upon by the examiner, a teaching or suggestion to invade a sterile tube by cutting it. Accordingly, we do not sustain the rejection of claims 12-14.

DECISION

The rejections under 35 U.S.C. § 103 of claims 15 and 16 over Smith and Isono, claims 8-10 over Smith, Isono and Popovich,

and claim 11 over Smith, Isono, Popovich and Tenczar, are affirmed. The rejection of claims 12-14 over Smith, Isono and

Popovich is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

EDWARD C. KIMLIN Administrative Patent Judge	)	
CHUNG K. PAK Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
TERRY J. OWENS Administrative Patent Judge	)	

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APPENDIX

8. A method for forming a sterile connection between two disassociated compressible rubber fluid conduit tubing segments so as to permit sterile fluid flow therebetween, each said tubing segment having a hollow bore therein for fluid flow, and each said tubing segment being in fluid communication with a respective sterile tubing segment, said method comprising:

(a) compressing a first one of said two fluid conduit tubing segments so as to isolate a free end thereof from the respective sterile tubing segment in fluid communication therewith;

(b) compressing the second of said two fluid conduit tubing segments so as to isolate a free end thereof from the respective sterile tubing segment in fluid communication therewith;

(c) arranging within the bore of said isolated free end of said first fluid conduit tubing segment one of the respective two ends of a hollow conductive metal tube;

(d) arranging within the bore of said isolated free end of said second fluid conduit tubing segment another end of said hollow conductive metal tube, thereby connecting said first and second fluid conduit tubing segments and establishing a fluid flow path therebetween;

(e) arranging at least a portion of said connected fluid conduit tubing segments, including said hollow conductive metal tube, within the field of a primary induction work coil;

(f) supplying an alternating current to said work coil so as to cause said hollow conductive metal tube to be inductively heated sufficiently to sterilize it and for sterilizing the bore portion of each of said isolated free ends of said fluid conduit tubing segments, thereby forming a sterile connection; and

(g) thereafter removing the compression on each of said fluid conduit tubing segments to establish fluid communication between said sterile tubing segments through said sterile connection.